



1

SEQUENCE LISTING

<110> KIM, BUM-JOON
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KO, YOUNG HWAN
KOH, JEONG-SAM
PARK, DONG-JIN
LEE, HYANG BURM
SEOUL, HONG KIM
KIM, SUN-HUYN

<120> IDENTIFICATION METHOD OF GENUS STREPTOMYCES BY USING
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<140> 10/824,527
<141> 2004-04-15

<150> KR 2003-24656
<151> 2003-04-18

<150> KR 2003-80580
<151> 2003-11-14

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<170> PatentIn Ver. 3.2

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<212> DNA

<213> Streptomyces erumpens

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 gtggagacca aggagccatcg cgcttcacc gcctccatct ccggccggcg caccaggatc 240
 ggcgagctga tcggccgggc catggacaag gtcggcaagg aaggcgctcat caccgtcgag 300
 gagtcccaga ctttcgggtct ggagctggaa ctcaccggagg gtatgcgtt cgacaagggc 360
 tacatctcggtactacttgc caccgacatg gagcgcatgg aggccgcgt cgacgaccgg 420
 tac 423

<210> 31

<211> 420

<212> DNA

<213> Streptomyces fulvissimus

<400> 31

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 ggcacatcgaga aggccgtcga ggccgtctcc ggccgcctgc tcgagcaggc caaggacgtg 180
 gagaccaagg agcagatcgc ttgcaccgc tccatctccg ccggccacac ccagatcgcc 240
 gagctcatcg ccggaggccat ggacaagggtc ggcaaggaag gctgcacatcac cgtcgaggag 300
 tcgcagaccc tcggtctgga gctcgagctc accgaggggca tgcgcttcga caagggtac 360
 atctcgccgt acttcgccac cgacatggag cgtatggagg cgtcgtcga cgaccctgac 420

<210> 32

<211> 420

<212> DNA

<213> Streptomyces galilaeus

<400> 32

aagaagacgg acgacgtcgc cggtgacggt acgaccaccg cgaccgttct cgcccaggcg 60
 ctggtcgcg agggcctcgc caacgtggcg gccggcgcca acccgatggc tctgaagcgc 120
 ggcacatcgaga aggccgtcga ggccgtctcc ggccgcctcc tcgagcaggc gaaggatgtc 180
 gagaccaagg agcagatcgc ttgcacggcc tccatctccg ccggccacac ccagatcgcc 240
 gagctcatcg ccggaggcgat ggacaagggtc ggcaaggaag gctgcacatcac ggtcgaggag 300
 tcgcagaccc tcggtctcga gctcgagctc accgaggggca tgcgcttcga caagggtac 360
 atctcgccgt acttcgcgac cgacatggag cgtatggagg ccgtcctcga cgaccctgac 420

<210> 33

<211> 420

<212> DNA

<213> Streptomyces griseochromogenes

<400> 33

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60
 ctggtcaagg aaggcctccg caacgtcgcc gccggcgcca acccgatggc tctgaagcgc 120

ggtatcgaga aggccgtcga ggccgtctcc gccgcctcc tcgagcaggc gaaggacgtc 180
 gagaccagg accagatcgc ctccaccgcg tccatctccg ccgcccacac ccagatcgac 240
 gagctgatcg ccgaggccat ggacaaggtc ggcaggaaag gctcatcac cgtcgaggag 300
 agcaacacct tcggctcgga gctcgagtc accgaggga gtcgcttcga caagggtac 360
 atctccgcct acttcgcac cgacatggag cggcgtcga ggaccgtac 420

<210> 34
<211> 420
<212> DNA
<213> *Streptomyces griseolus*

<400> 34
aagaagacgg acgacgtcgc cggcgacggt acgaccaccc ccaccgttct cgcccaggcg 60
ctcgccgtg agggcctcgcaaacgtcgcc gccgggtgcca acccgatggc tctcaagcgt 120
ggcatcgaga agggcgtcga ggccgtctcc gccgcctgc tggagcaggc caaggacgtg 180
gagaccagg accagatcgc ttgcaccgc tccatctccg ccgcccacac cgagatcgac 240
gccaagatcg ccgaggccat ggacaaggtc ggcaggaaag gctcatcac cgtcgaggag 300
tcccagacct tcggctcgga gctggaaactc accgagggtta tgcgcttcga caagggtac 360
atctcgccgt acttcgcac cgacatggag cgtatggaga cgtcgctcga cgaccgtac 420

<210> 35
<211> 420
<212> DNA
<213> *Streptomyces griseoviridis*

<400> 35
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ctggtaagg agggcctcgcaaacgttagcc gccggcgcca acccgatggc cctgaagcgc 120
ggtatcgaga agggcgtcga ggccgtctcc gccgcctgc tggagcaggc gaaggacgtc 180
gagaccagg accagatcgc ctccacggcc tccatctccg ccgcccacac ccagatcgac 240
gagctgatcg ccgaggccat ggacaaggtc ggcaggaaag gctcatcac cgtcgaggag 300
tcccagacct ttggctcgga gctggagtc accgagggtta tgcgcttcga caagggtac 360
atctcgccgt acttcgcac cgacatggag cgtatggagg cgtcgctcga cgaccgtac 420

<210> 36
<211> 420
<212> DNA
<213> *Streptomyces humiferus*

<400> 36
aagaagacgg acgacgtcgc cggtgacggt acgaccaccc cgaccgttct cgcccaggcg 60
ctggtaagg aaggcctcgcaaacgtcgcc gccggcgcca acccgatggc cctgaagcgc 120
ggtatcgaga agggcgtcga ggccgtctcc gccgcctgc tggagcaggc caaggacgtc 180
gagaccagg accagatcgc ctccacggcc tccatctccg ccgcccacac ccagatcgac 240
gagctcatcg ccgaggccat ggacaaggtc ggcaggaaag gctcatcac cgtcgaggag 300
tcccagacct tcggctcgga gctggagtc accgagggtta tgcgcttcga caagggtac 360
atctcgccgt acttcgcac cgacatggag cgtatggagg cgtcgctcga cgaccgtac 420

<210> 37
<211> 420
<212> DNA
<213> *Streptomyces hygroscopicus*

<400> 37

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60
 ctggtcccgcg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctcaagcgc 120
 ggtatcgagc gtgccgtcga ggccgtctcc gccgcctgc tggagcaggc caaggacgtg 180
 gagaccaagg agcagatcgc ttccacggcc tccatctccg ccgctgacac ccagatcggc 240
 gagctcatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
 tcccagacct tcggtctgga gctggaaactc accgagggta tgcgcttcga caagggctac 360
 atctcggtcgt acttcgcccac cgacatggag cgtatggagg cgtcgctcga cgaccctgtac 420

<210> 38

<211> 420

<212> DNA

<213> *Streptomyces minutiscleroticus*

<400> 38

aagaagacgg acgacgtcgc cggtgacggc acgacgaccg cgaccgtcct ggcccaggcc 60
 ctggtcccgcg agggcctgcg caacgtcgcc gccggcgcca acccgatggc cctgaagcgc 120
 ggtatcgaga agggcgtcga ggccgtctcc ggtgcctgc tggagcaggc gaaggacgtc 180
 gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgcccacgt ccagatcggc 240
 gagctcatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
 tcccagacct tcggtctgga gctggagctc accgagggta tgcgcttcga caagggctac 360
 atctcggtcgt acttcgcccac cgacatggag cgtatggagg cgtcgctcga cgaccctgtac 420

<210> 39

<211> 423

<212> DNA

<213> *Streptomyces murinus*

<400> 39

aagaagacgg acgacgtcgc cggtgacggt acgaccaccc cgaccgtcct cgcccaggcc 60
 ctggtcacag cgaaaggccct ggcacgtc gcccgggtg ccaacccgtat ggccctgaag 120
 cgcgttatcg agaaggccgt cgaggccgtc tccgcggccc tgctcgagca gccaaggac 180
 gtcgagacca aggagcatg cgcctccacc ggttccatct ccgcccggca cacccagatc 240
 ggcgagctga tcggcgaggc gatggacaag gtcggcaagg aaggcgtcat caccgtcgag 300
 gagagacaaca ctttcgggtt ggagcttgag ctcaccgagg gcatgcgtt cgacaaggcc 360
 tacatcttcg cttacttcgc caccgacatg gagcgcgtatgg aggcgtcgct cgacgaccct 420
 tac

<210> 40

<211> 420

<212> DNA

<213> *Streptomyces nodosus*

<400> 40

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 ctggtcccgcg agggcctgcg caacgtcgcc gccgggtgcca acccgatggc cctgaagcgc 120
 ggtatcgaga agggcgtcga ggccgtctcc accgcctgc tggagcaggc gaaggacgtc 180
 gagaccaagg agcagatcgc ctccacggcc tccatctccg ccgcccacac ccagatcggc 240
 gagctgtatcg ccgaggccat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
 tcgcagacct tcggtctcga gctcgagctc accgagggca tgcgcttcga caagggctac 360
 atctcggtcgt acttcgcccac cgacatggag cgtatggagg cgtcgctcga cgaccctgtac 420

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<210> 41
<211> 420
<212> DNA
<213> Rhodococcus equi

<400> 41
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ctcgtccgcg agggcctgcg caacgtcgct gcccgcgcca acccgctggg tctgaagcgc 120
ggcatcgaga aggccgtcga ggccgtcacc gccaagctgc tcgacaccgc caaggaggtc 180
gagaccaagg agcagatcgc tgccacccgc gggatctcg ggccgcactc cacgatcggc 240
gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
tcgaacttcc tccggctgca gctcgagctc accgagggtt tgcgcttcga caagggctac 360
atctcgctgt acttcgac cgacgcccggag cgtcaggaag cggtcctcga ggatccgtac 420

<210> 42
<211> 420
<212> DNA
<213> Tsukamurella paurometabola

<400> 42
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ctcgtgcgcg agggctgcg caacatggct gcccgtgcg acccgctggg cctcaagcgg 120
ggcatcgaga aggccgtcga ggccgtgacc gggcacctgc tcaaggaggc caaggaggtc 180
gagaccaagg agcagatcgc tgctaccgcg ggcattctcg ccggcgaccc cgccatcggt 240
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atctccggct acttcgcccc acgacgcccggag cgtcaggagg ccgtgctcga ggacgcctac 420

<210> 43
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 43
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gagctcatcg ccgaggcgat ggacaagggtt ggcaaggaag gcgtcatcac cgtcgaggag 300
tcccagaccc tccgtctggg gctggagctc accgagggtt tgcgcttcga caagggctac 360
atctcgccgt acttcgcccc acgacatggag cggatggagg cgtcgtcga cgacccgtac 420

<210> 44
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 44
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ctgggtccgcg agggcctgcg caacgtcgcc gcccgcgcca acccgatggc cctgaagcgc 120
ggtatcgaga aggccgtcga ggccgtctcc ggtgcgtgc tcgaccaggc caaggaggtc 180
gagaccaagg agcagatcgc ctccacggcc tccatctccg ccggccgacac ccagatcggc 240
gagctcatcg ccgaggcgat ggacaagggtt ggcaaggaag gcgtcatcac cgtcgaggag 300
tcgcagaccc tccggcttgg gcttgagctc accgagggtt tgcgcttcga caagggctac 360
atctcgccgt acttcgcccc acgacatggag cggatggagg cgtcgtcga ggacccgtac 420

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<210> 45
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 45
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ctcgtacgcg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgc 120
ggcatcgaga aggccgtcga ggccgtctcc ggccgcctgc tggagcaggc gaaggatgtc 180
gagaccaagg agcagatcgc ttccacggcc tccatctccg ccgcccacac ccagatcggc 240
gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
tcccagacct tcggtctgga gctggagctc accgagggtta tgcgcttcga caagggctac 360
atctcggtcg acttcgcccac cgacatggag cggatggagg cgtcgctcga cgaccgtac 420

<210> 46
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 46
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ctcgtccgtg agggcctgcg caacgtcgcc gccggtgcca acccgatggc tctcaagcgt 120
ggcatcgaga aggccgtcga ggccgtctcc ggccgcctgc tggagcaggc caaggacgtg 180
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gccaagatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
tcccagacct tcggtctgga gctggaaactc accgagggtta tgcgcttcga caagggctac 360
atctcggtcg acttcgcccac cgacatggag cgtatggaga cgtcgttcga cgaccgtac 420

<210> 47
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 47
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ggcatcgaga aggccgtcga ggccgtctcc ggccgcctgc tggagcaggc gaaggatgtc 180
gagaccaagg agcagatcgc ttccacggcc tccatctccg ccgcccacac ccagatcggc 240
gagctcatcg ccgaggcgat ggacaaggtc ggcaaggaag gcgtcatcac cgtcgaggag 300
tcccagacct tcggtctgga gctggagctc accgagggtta tgcgcttcga caagggctac 360
atctcggtcg acttcgcccac cgacatggag cgtatggagg ccgtcctcga cgaccgtac 420

<210> 48
<211> 420
<212> DNA
<213> Streptomyces scabiei

<400> 48
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ggcatcgaga aggccgtcga ggccgtctcc ggccgcctgc tggagcaggc gaaggatgtc 180
gagaccaagg agcagatcgc ttccacggcc tccatctccg ccgcccacac ccagatcggc 240
gagctcatcg ccgaggcgat ggacaaggta ggcaaggaag gcgtcatcac cgtcgaggag 300

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tcccagacct tcggtctgga gctggagctc accgagggtta tgcgcttcga caagggctac 360
 atctcgccgt acttcgcccc acgatggag cgtatggagg ccgtccttcga cgaccctgtac 420

<210> 49
<211> 420
<212> DNA
<213> *Streptomyces scabiei*

<400> 49
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tcccagacct tcggtctgga gctggagctc accgagggtta tgcgcttcga caagggctac 360
atctcgccgt acttcgcccc acgatggag cgtatggagg ccgtccttcga cgaccctgtac 420

<210> 50
<211> 420
<212> DNA
<213> *Streptomyces acidiscabies*

<400> 50
aagaagacgg acgacgttagc cggtgacggc acgacgaccg cgacggtcct ggcccaggca 60
ctggcccgcg agggcctccg caacgtcgcc gcaggcgcca acccgatggc cctgaagcgc 120
ggcatcgaga agggcgatcgaa ggccgtctcc ggcgtctcc tggagcaggc gaaggacgtc 180
gagaccaagg agcagatcgcc ttgcacggcc tccatctccg ccggccacac gcagatcgcc 240
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tgcagacct tcggcctgga gcttgagctc accgagggtca tgcgcttcga caagggctac 360
atctcgccgt acttcgcccc acgatggag cgtccctgga cgaccctgtac 420

<210> 51
<211> 420
<212> DNA
<213> *Streptomyces turgidiscabies*

<400> 51
aagaagacgg acgacgttagc cggtgacggc acgacgaccg cgacggtcct ggcccaggcg 60
ctggcccgcg agggcctgca caacgtggcc gcgggtgcga acccgatggc cctgaagcgc 120
ggcatcgaga agggcgatcgaa ggccgtctcc ggtgcgtgc tcgaccaggc gaaggagggtc 180
gagacgaagg agcagatcgcc ttgcacggcc tccatctccg ccggccacac gcagatcgcc 240
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tcccagacct tcggtctgga gctggaaactc accgagggtta tgcgcttcga caagggctac 360
atctcgccgt acttcgcccc acgatggag cgtccctgga ggaccctgtac 420

<210> 52
<211> 420
<212> DNA
<213> *Streptomyces turgidiscabies*

<400> 52
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ctggcccgcg agggcctgca caacgtggcc gcgggtgcga acccgatggc cctgaagcgc 120
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gagacgaagg agcagatcg ttcgaccggcc tccatctccg ccggccgacac gcagatcg 240
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 tcccagacct tcggtctgga gctggaactc accgagggtta tgcgcttcga caagggctac 360
 atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcgaa ggaccctac 420

<210> 53
<211> 420
<212> DNA
<213> *Streptomyces turgidiscabies*

<400> 53
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ctggtcgcg aggccctcgcaaacgtggcc gccccgtgcga acccgatggc cctgaagcgc 120
ggcatcgaga aggccgtcgaa ggcgtctcc ggtgcgtgc tcgaccaggc gaaggaggtc 180
gagacgaagg acgacatcg ttgcaccggcc tccatctccg ccggccgacac gcagatcg 240
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tcccagacct tcggtctgga gctggaactc accgagggtta tgcgcttcga caagggctac 360
atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcgaa ggaccctac 420

<210> 54
<211> 420
<212> DNA
<213> *Streptomyces turgidiscabies*

<400> 54
aagaagacgg acgacgtac cggtgacggc acgacgaccg cgaccgtcct ggcccaggcg 60
ctggtcgcg aggccctcgcaaacgtggcc gccccgtgcga acccgatggc cctgaagcgc 120
ggcatcgaga aggccgtcgaa ggcgtctcc ggtgcgtgc tcgaccaggc gaaggaggtc 180
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tcccagacct tcggtctgga gctggaactc accgagggtta tgcgcttcga caagggctac 360
atctcggcgt acttcgcgac cgacatggag cgcatggagg cgtcgctcgaa ggaccctac 420

<210> 55
<211> 420
<212> DNA
<213> *Streptomyces bottropensis*

<400> 55
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ctggtcgcg aggccctcgcaaacgtggcc gccccgtgcga acccgatggc cctcaagcgc 120
ggcatcgaga aggccgtcgaa ggcgtctcc ggcgtccgtc tggagcaggc gaaggatgtc 180
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tcccagacct tcggtctgga gctggagctc accgagggtta tgcgcttcga caagggctac 360
atctcggcgt acttcgcgac cgacatggag cgatggagg cgatcgctcgaa cgaccctac 420

<210> 56
<211> 420
<212> DNA
<213> *Streptomyces diastatochromogenes*

<400> 56
aagaagacgg acgacgtcgccggt acgaccaccg cgaccgttct cgcccaggcc 60

ctggtcaagg aaggcctgcg caacgtagcc gccggcgcca acccgatggc cctcaagcgc 120
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 gagaccaagg agcagatcgcc ctccacggcc tccatctccg ccggccgacac ccagatcgcc 240
 gagctgatcg ccgaggccat ggacaaggc ggcaggaaag gcgtcatcac cgctcgaggag 300
 tcgcagacct tcggtctggaa gcttgagctc accgaggggca tgcgcttcga caagggtac 360
 atctcggcgt acttcgcgac cgacatggag cgcatggagg cggtcctggaa ggaccctac 420

<210> 57
<211> 420
<212> DNA
<213> *Streptomyces neyagawaensis*

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 ctcgtacgcg aggccctgcg caacgtcgcc gccgggtgcca acccgatggc cctgaagcgc 120
 ggtatcgaga aggccgtcgaa ggccgtctcc ggtgcgtcg tcgaccaggc caaggaggc 180
 gagaccaagg agcagatcgcc ctccacggcc tccatctccg ccggccgacac ccagatcgcc 240
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 tcgcagacct tcggtctggaa gcttgagctc accgaggggca tgcgcttcga caagggtac 360
 atctcggcgt acttcgcac cgacatggag cgcatggagg cggtgctcgaa ggaccctac 420

<210> 58
<211> 420
<212> DNA
<213> *Streptomyces scabiei*

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 ctcgtacgcg aggccctgcg caacgtcgcc gccgggtgcca acccgatggc tctcaagcgc 120
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